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## WATER RIGHTS IN HUMID AREAS

by Howard T. Critchlow, M. ASCE

IRRIGATION AND DRAINAGE
DIVISION

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# WATER RIGHTS IN HUMID AREAS[1]

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## SYNOPSIS

This paper presents data and information on the legal control of water rights and on irrigation practice in the 31 states east of the 100th meridian. The information was obtained from replies to a brief questionnaire sent to 100 agencies in 38 states. Results of the survey indicate the continuing use of the riparian doctrine, with certain modifications, in the humid eastern states. The increasing use of water for supplemental irrigation is only one of the reasons why many of those states should be preparing legislation that will meet in an equitable manner the growing demands for water.

## INTRODUCTION

The information used in the preparation of this paper has been obtained through a brief questionnaire sent to 100 agencies in 38 states, excluding the eight inter-mountain states in the United States. The agencies contacted were the state departments of agriculture, the agricultural experiment stations, state colleges of agriculture, and the state farm bureaus. Replies have been received from practically all the states and most of their bureaus. A similar survey was made by the author in 1950 covering the 14 northeastern states extending south and west to include Virginia, West Virginia, and Ohio. For purposes of this paper, the discussion is limited to the 31 states east of the 100th meridian all of which are considered humid states and report the use of supplemental irrigation to some degree. A large increase in this practice is also indicated during the past four years due to unusual drought conditions during the growing seasons in that period.

### Legal Control of Water Rights

In all of the 31 states the riparian doctrine is applicable, although it has been modified considerably in a number of the states. It may also be noted that the appropriation doctrine is recognized by the 17 western states, eight of which (inter-mountain states) use it exclusively and the remaining nine operate concurrently with the riparian doctrine. A third doctrine known as prescriptive right is also of interest from a legal standpoint.

While the meaning of these three docrines is well understood by engineers

1. Presented to the Irrigation & Drainage Division, ASCE Conference, Salt Lake City, Utah, September 9, 1954.
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acquainted with irrigation practice, the layman's definitions of each follows: (*)

"A riparian right originates by reason of ownership of land contiguous to or abutting upon a natural watercourse or lake, or land through which such a natural watercourse passes to lower lying areas. A riparian right is a real property right but is limited to the right to use the water rather than the ownership of the water itself. This is because stream water is recognized as a moving rather than a stationary resource.

"The riparian right is a right in common. Thus each riparian owner's right of use is limited by the corresponding use which other riparian owners may make of the stream. Beneficial use is not in reality the basis of the right.

"An appropriative right is one which is permitted by statute. One who first appropriates water and puts it to beneficial use within a reasonable period of time acquires a prior right to its continued use so long as this use is reasonable. The appropriative right relates to a definite amount of water at a specific time and particular place. Beneficial use is the essence of an appropriative right.

"A prescriptive right is one which is acquired by use for the statutory period of claim of right even though the user did not have an actual valid right to use the water in the first place.

"The prescriptive right is for a definite amount of water at a specific time and for a particular place, the same as an appropriative right. In times of shortage, a prescriptive right, since it is for a definite time and specific amount, may take precedence over the riparian right."

A more detailed description of the legal doctrines of water rights from the Massachusetts authority, Daniel J. Curran, of the Department of Agriculture, is summarized as follows: (**)

The first limitation in the use of water is that the primary use is for the support of life, by furnishing what is necessary for quenching of thirst of men and animals and for the necessary cooking of their food. It has been held in Massachusetts that water cannot be diverted from the stream for irrigation purposes to the injury of an ancient mill, but both the right to utilize the flow of the stream to furnish power and the right for irrigation are inferior to the use of it for quenching thirst, and, as between the use for power and the use for irrigation, the question which is superior may depend upon the locality, needs, and customs of the people. In other sections of the country the conditions may be such that the agricultural interests are paramount, there being few mills, and the need of them not great. Under such circumstances it may be unreasonable for one acquiring a mill right upon the stream to insist that there shall be no interference with his power by the diversion of water for agriculture. The only rule which can be adopted under the principle of the common law, which recognizes no favoritism, is that use made by each owner after the necessities of life are satisfied must be such as to be reasonable under all circumstances, with no priority in favor of any interest. There are, however, certain rules which have been laid down by the courts for the determination of what is a reasonable use. One is that the upper owner has no prior or superior right to the use of the water and can withdraw

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* From Water Resource, Use, and Management in Mississippi, by H. H. Lester, State Conservation Engineer, U. S. Department of Agriculture, Jackson, Mississippi.

** Paper No. 2554, Transactions ASCE, Volume 118A, 1953, page 509.

from the stream only such a quantity as to represent his share of the amount flowing in the stream and the number of other persons having a right to use it are taken into consideration. Another rule is that the water must not be used by the upper owner in a wasteful manner. The limitation upon the right to use water for irrigation purposes which is very material, is that the right to use the water is limited strictly to riparian lands. The right is founded on riparian ownership and riparian lands must be regarded as those within the watershed of the stream.

(**) From Laws Affecting the Control and Use of Water in Massachusetts.

The foregoing discussion applies especially to surface waters such as running streams, lakes, and ponds, with outlets. "Diffused waters" have been classified as all waters flowing over the surface of the land for short duration which are not running in a natural watercourse and which have not yet been concentrated in lakes or ponds. This water belongs to the owner across whose land it flows and may be collected for irrigation without infringing on the legal rights of his neighbors. However, he must not impound it and release it suddenly to the damage of the lower owners.

Ground water is an important source for supplemental irrigation in many states. A survey made in 1951 by the author in connection with a conference on water resources in Illinois disclosed that 12 states have legislation controlling allocation and use of ground water, but New Jersey is the only state in which such control includes irrigation and agricultural use.

A summary based on the information received on legal control for irrigation or other private use from the several states, with the source of the information as noted parenthetically, follows.

For the 14 northeastern states previously mentioned, reference is made to the author's paper entitled "Irrigation Water Rights in Humid Areas," based upon a survey in 1950. (**) So far as the present survey has revealed, there are no important changes in the legislation on the use of water for irrigation in these northeastern states. The information on legal control for these northeastern states is summarized as follows:

Connecticut.—No permits are required for irrigation.

Delaware.—As of 1950 there had been no occasion to establish any laws to govern irrigation.

Maine.—Water rights are governed by common law precepts.

Maryland.—The water resources law of 1933 declares it to be the policy of the state to control the appropriation and use of both surface and underground waters and makes it unlawful to appropriate or use any waters without a permit. The use of water for domestic and farming purposes is exempted from this control.

Massachusetts.—The principles of law under riparian rights govern the quantity of water used by riparian owners. Ground water is under the control of the land owner.

New Hampshire.—Irrigation is so limited in its size and volume that the use of water is no problem. The state pays no attention to it. (State Farm Bureau Federation.)

New Jersey.—The riparian doctrine governs the private use of surface waters by owners of land along natural watercourses. Surface and ground waters for public and potable use are subject to legal control under legislation passed in 1907 and 1910. In 1947 a law was enacted (Chapter 375) giving authority to regulate the diversion of subsurface waters of the state for domestic, industrial, and other uses including irrigation. This law requires

diverters to obtain permits to use in excess of 100,000 gallons daily in certain areas of the state. (Division of Water Policy and Supply.)

New York.—The control of surface waters is under the common law. Some farmers utilize water from the Barge Canal. Although there is a right to the use of such water in most deeds to the land, a permit is required for irrigation uses. On Long Island most of the water for irrigation is obtained from wells. A permit is required to drill wells on Long Island and also for the diversion of water in excess of 100,000 gallons a day for all uses except agricultural uses.

Pennsylvania.—The law of water rights in Pennsylvania is based upon the common law doctrine that the upper owner of land on a stream may use as much water as needed for domestic purposes; but that for non domestic purposes, such as irrigation, he may not materially diminish the stream. The extensive use of water for purposes of irrigation is a new problem. Consequently, there are no statutory laws or legal decisions as to the right to appropriate overflow waters by impounding in reservoirs, or the right of an irrigation company to use the power of eminent domain as a public water agency. By legislative action or by court decision, the existing law of riparian rights can be adapted to cope with the problem of irrigation by giving land owners along streams the right to capture overflow waters, authorize irrigation companies to use the power of eminent domain so that owners whose land lies beyond the stream may obtain water as well as those owners along the stream, and by applying the principle of prior appropriation to navigable streams under the jurisdiction of the Commonwealth. (W. C. Anderson and F. H. Cook.)

Rhode Island.—Water rights are governed by common law precepts only.

Vermont.—There are many rulings of the Vermont Supreme Court concerning water rights which are interpretations of the common law. Although the rights to water are based on the common law concept of reasonable use, the definition of "reasonable use" has had to be decided many times by the courts. Should irrigation become a widely accepted practice in Vermont there might very well be need to overhaul and clarify the laws with respect to water rights. (L. J. Peet, State Conservationist.)

Virginia.—The State has no legal control over the use of water for irrigation. The present practice takes practically all the water from surface sources by impounding waters behind earth dams. (J. A. Waller, Jr., Agricultural Extension Service.)

West Virginia.—There is no legal control over the use of water for irrigation. Known litigation in connection with water rights generally deals with pollution and not with use for irrigation. (S. L. Galpin, Hydrologist, Agricultural Experiment Station.)

The 1954 survey discloses legislation on water rights in additional states as follows:

Kansas.—The State of Kansas is partly in the arid area and partly in the humid or sub-humid area. A law, Chapter 82A, Article 7, dated June 28, 1945, is of interest. The law governs the appropriation of water for beneficial use other than domestic. It provides that surface or gound waters of the state may be appropriated and that such appropriation shall not constitute an absolute ownership of such water but shall remain subject to the principle of beneficial use. Where appropriations of water for different purposes conflict they shall take precedence in the following order, namely: domestic, municipal, irrigation, industrial, recreational, and water power uses. As between the appropriators, the first in time is the first in right.

Non-beneficial use for three years cancels the appropriation authorized. (W. H. Sunderland, Kansas Board of Agriculture.)

Kentucky.—The Kentucky General Assembly took an important step in the 1954 session to define some basic points on the question of the law as it relates to water rights. This state has never had any basic statutory law on this subject and the Court of Appeals has never passed final judgment on any questions that exist. The new law, H. B. 497, relates to the conservation, development, and use of water resources. The riparian principle is enunciated as guiding the use of water. The Legislative Research Commission was directed to conduct a study of water resources, use, and rights, and report its finding to the General Assembly at the 1956 session. (Henry Ward, Commissioner of Conservation.)

Michigan.—One of the most critical problems associated with the increasing practice of supplemental irrigation in the eastern states is that of water rights. This problem is particularly important in Michigan because as yet the state has no legislation relating to irrigation. Such law as does exist on the subject is found in the interpretations that the courts have given to the common law doctrine of water rights. Michigan has been considering legislation for the regulation of diversion and use of surface waters for beneficial purposes. (Water Rights for Irrigation in Michigan, by Raleigh Barlowe, Michigan State College.)

Mississippi.—A preliminary report on the historical, physical, and legal aspects of water problems in Mississippi was prepared under the direction of the Mississippi Inter-Organizational Committee on Water Resources and was presented to the Governor and the Legislature in December, 1953. The report recommended legislation for the appointment of a seven-member commission to conduct a study into the matter of implementation of a policy for the control, development, and use of water for all beneficial purposes and report before the convening of the Legislature in January, 1956. This law, however, failed to pass.

Missouri.—Irrigation is not a general practice, but is becoming widespread throughout the state, and is accepted by many agriculturists in Missouri. The rate of acceptance of irrigation will be determined largely by the deficiencies of rainfall at the proper time, and the availability of water for applying irrigation to the soil. When and if irrigation becomes widespread, statutes will be necessary to assure fair distribution of water among the riparian owners. It is believed that our General Assembly will not neglect to supplement the common law with adequate laws to protect riparian rights; it is doubtful if these statutes will be forthcoming in time to prevent the waste of money through development beyond a fair share of the stream flow. Without legislation, the person who attempts to use the waters from a flowing stream is subject to court action, since the common law prevails in Missouri on water for irrigation. Although the court would, no doubt, award him his fair share of the water in the stream, the delay caused by the legal proceedings might let the crop perish. Thus, the individual would lose his inchoate value in the crops, and in addition, idle the irrigation equipment. (Irrigation, Its Development and Problems, by J. C. Alexander, Missouri Division of Resources and Development.)

South Carolina.—Riparian doctrine is in effect. No legislation has yet been passed to establish a water policy although a bill was prepared by a Water Policy Committee and submitted to the General Assembly in 1954. Industries generally secure special legislation for use of surface water only. (South Carolina Experiment Station, W. P. Law, Jr., Associate Agricultural Engineer.)

## Irrigation Practice

As previously stated, replies were received from all of the states and to 85 percent of the inquiries made. All have indicated the use of supplemental irrigation to some degree, though in some instances accurate statistical records were very poor or lacking altogether. Maximum acreages using supplemental irrigation were reported by Arkansas (669,000), Louisiana (640,000), Florida (476,000), and Mississippi (140,000). States reporting less than 10,000 acres under supplemental irrigation are Delaware, Illinois, Iowa, Maine, Maryland, Missouri, New Hampshire, Rhode Island, and Vermont. No statistics were available from Georgia or West Virginia, where the practice is reported to be comparatively new or limited and acreage involved is presumed to be small.

Principal crops irrigated are rice, corn, citrus fruits, potatoes, truck crops, and pasture, though many states reported in detail a great variety of other crops. The use of water in rice and cranberry culture is not strictly irrigation; however these crops have been reported and are included in the acreages given.

The acreage reported discloses that the amount of water used for supplemental irrigation in the eastern states is about equally divided between surface and ground water. Tabulation of total acreage irrigated, the percentage of ground and surface water used, and the principal crops irrigated in the various states, follows on the next page.

## EXTENT OF SUPPLEMENTAL IRRIGATION IN 31 HUMID STATES

| State | Total Acreage Irrigated 1954 | Source of Water | | Principal Crops Irrigated |
|---|---|---|---|---|
| | | Ground % | Surface % | |
| Alabama | 34,974 | 15 | 85 | Pasture, corn |
| Arkansas | 669,000 | 90 | 10 | Rice (500,000 acres) |
| Connecticut | 20,400 | 0.1 | 99.9 | Tobacco, alfalfa, vegetables |
| Delaware | 5,000 | 10 | 90 | |
| Florida | 476,000 | 55 | 45 | Vegetables, citrus fruit, pasture |
| Georgia | | 30 | 70 | Vegetables, tobacco, corn |
| Illinois | 3,000 | 80 | 20 | Corn, vegetables |
| Indiana | 20,000 | 25 | 75 | Vegetables, corn, alfalfa |
| Iowa | 5,000 | 0 | 100 | Corn |
| Kentucky | 29,000 | 0 | 100 | Corn, tobacco, alfalfa, pasture |
| Louisiana | 640,000 | 25 | 75 | Rice (593,000 acres) |
| Maine | 3,000 | 5 | 95 | Potatoes |
| Maryland | 8,000 | 5 | 95 | Vegetables |
| Massachusetts | 10,000 | 5 | 95 | Vegetables |
| Michigan | 70,000 | 40 | 60 | Vegetables, potatoes |
| Minnesota | 15,000 | 20 | 80 | Vegetables |
| Mississippi | 140,000 | 75 | 25 | Rice (100,000 acres) |
| Missouri | 2,000 | 75 | 25 | Cotton, pasture |
| New Hampshire | 1,900 | 5 | 95 | Potatoes |
| New Jersey | 65,500 | 40 | 60 | Vegetables, potatoes |
| New York | 30,000 | 50 | 50 | Potatoes, vegetables |
| North Carolina | 20,000 | 15 | 85 | Tobacco |
| Ohio | 46,000 | 10 | 90 | Vegetables |
| Pennsylvania | 25,000 | 10 | 90 | Vegetables, alfalfa, fruit, pasture |
| Rhode Island | 2,700 | 5 | 95 | Potatoes |
| South Carolina | 30,000 | 25 | 75 | Pasture, fruit, rice |
| Tennessee | 10,000 | 5 | 95 | Pasture |
| Vermont | 5,250 | 5 | 95 | Pasture |
| Virginia | 11,200 | 45 | 55 | Vegetables, alfalfa |
| West Virginia | | 0 | 100 | |
| Wisconsin | 20,000 | - | - | Potatoes |
| | 2,417,924 | 52 | 48 | |

Total acreage reported in 1954 from the group of 14 northeastern states is 228,950, representing an increase of about 77 percent in the past four years over the figure of 129,200 acres reported in 1950.

## Summary

This brief survey all adds up to the continuing use of the riparian doctrine in the eastern states with certain modifications as previously mentioned. Even though the need for specific legislation on water control is often indicated after an investigation has been made, public opinion must be formed through experience, education, and sometimes after disaster has struck, before the necessary legislation can be enacted to meet modern and ever increasing needs for water for all and often conflicting purposes. The increasing use of water for supplemental irrigation is only one of the reasons why many of the states should be looking ahead and preparing legislation that will meet in an equitable manner the growing demands for water. Since conditions throughout the country vary widely from place to place, and because the states in the final analysis are the custodians of the water for their citizens, the control should be exercised on the state level, subject to such superior rights as may be delegated to the Federal government.

## ACKNOWLEDGMENTS

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c. Discussion of several papers, grouped by Divisions.

e. Presented at the Atlantic City (N.J.) Convention in June, 1954.

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